

A multi-input, multi-output pre-filter improves operation of a multi-input receiver by shortening the effective memory of the channel with a set of FIR filters. The coefficients of these FIR filters can be fashioned to provide a variety of controls by the designer, for example, the value of the effective memory.

$$\begin{aligned} & \{t_1^{(1)}, t_2^{(1)}, \dots, t_n^{(1)}\} \cup \{t_1^{(2)}, t_2^{(2)}, \dots, t_n^{(2)}\} \cup \dots \cup \{t_1^{(k)}, t_2^{(k)}, \dots, t_n^{(k)}\} \\ & \text{where } t_i^{(j)} = \{t_{i1}^{(j)}, t_{i2}^{(j)}, \dots, t_{in}^{(j)}\} \text{ and } t_{ij}^{(j)} = \{t_{ij1}^{(j)}, t_{ij2}^{(j)}, \dots, t_{ijn}^{(j)}\} \end{aligned}$$